## REMARKS

Reconsideration of the above-referenced application in view of the above amendment, and of the following remarks, is respectfully requested.

Claims 1-20 are pending in this case. Claims 1 and 11 are amended herein and claims 16-20 are added herein. Support for the amended claims can be found in the specification in the paragraph/table bridging pages 5 and 6 and the third paragraph on page 9.

The Examiner rejected claims 1-2, 4, 7, 8 under 35 U.S.C. § 102(e) as being anticipated by Hung et al. (U.S. 6,380,096).

Applicant respectfully submits that amended claim 1 is unanticipated by Hung as there is no disclosure or suggestion in the reference of etching a low-k dielectric layer using a resist pattern and treating the low-k dielectric layer with a plasma having a bias power on the order of 400W, wherein the treating step occurs in-situ with respect to the etching step. Hung teaches a dual damascene process sequence in which a post-etch treatment (PET) is performed to ash the resist and remove residues left as a result of a fluorocarbon etch. Hung teaches to perform the PET under zero/very low bias power (Table 5 and col. 10 lines 48-57). Accordingly, Hung teaches away from the claimed invention which uses a bias power on the order of 400W. Moreover, the claimed invention is more than finding an optimum range. It is solving a different problem, which requires a different solution. Hung teaches a zero/very low bias power to remove fluorocarbon residues, whereas the claimed invention-- using a bias power on the order of 400W-- prevents nitride poisoning. The claimed invention is not disclosed or suggestion by Hung. Accordingly, Applicant respectfully submits that claim 1 and the claims dependent thereon are unanticipated by Hung.

The Examiner rejected claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Hung et al. (U.S. 6,380,096) in view of Tamaoka et al. (U.S. 6,232,237).

Applicant respectfully submits that claim 3 is patentable over the references for the same reasons discussed above relative to claim 1, from which claim 3 depends. Tamaoka is applied by the Examiner to teach a plasma treatment using $H_2O$ to remove a resist pattern.

The Examiner rejected claim 5 under 35 U.S.C. § 103(a) as being unpatentable over Hung et al. (U.S. 6,380,096) in view of Lin et al. (U.S. 6,342,448).

Applicant respectfully submits that claim 5 is patentable over the references for the same reasons discussed above relative to claim 1, from which claim 5 depends. Lin is applied by the Examiner to teach a low-k dielectric of FSG or OSG. While OSG has previously been suggested as a suitable dielectric material, there must be a suggestion that an etch sequence, such as that of Hung, developed for one dielectric material (or stack of materials) may be applied to a different dielectric material. That being said, Hung mentions that the etch sequence may be applied to other low-k dielectrics such as BCB and Black Diamond.

The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Hung et al. (U.S. 6,380,096) in view of Cox (U.S. 6,166,439).

Applicant respectfully submits that claim 6 is patentable over the references for the same reasons discussed above relative to claim 1, from which claim 6 depends. Cox is applied by the Examiner to teach a low-k dielectric material having a dielectric constant less than 2.0.

The Examiner rejected claims 9-10 under 35 U.S.C. § 103(a) as being unpatentable over Hung et al. (U.S. 6,380,096) in view of Yamazaki (U.S. 6,350,701).

Applicant respectfully submits that claims 9-10 are patentable over the references for the same reasons discussed above relative to claim 1, from which claims 9 and 10 depend. Yamazaki is applied by the Examiner to teach performing the ashing and etching steps in separate chambers transferred under vacuum.

The Examiner rejected claims 11-12, 14 under 35 U.S.C. § 103(a) as being unpatentable over Hung et al. (U.S. 6,380,096) in view of Lin et al. (U.S. 6,042,999).

Applicant respectfully submits that amended claim 11 is patentable over Hung in view of Lin as there is no disclosure or suggestion in the references of etching a via using a via resist pattern and removing the via resist pattern using a plasma treatment to reduce poisoning by a nitrogen source, wherein the plasma treatment occurs in-situ with respect to the etching step and occurs under a bias power of approximately 400W. Hung teaches a dual damascene process sequence in which a post-etch treatment (PET) is performed to ash the resist and remove residues left as a result of a fluorocarbon etch. Hung teaches to perform the PET under zero/very low bias power (Table 5 and col. 10 lines 48-57). Accordingly, Hung teaches away from the claimed invention which uses a bias power on the order of 400W. Moreover, the claimed invention is more than finding an optimum range. It is solving a different problem, which requires a different solution. Hung teaches a zero/very low bias power to remove fluorocarbon residues, whereas the claimed invention uses a plasma with a bias power on the order of 400W to prevent nitride poisoning. The claimed invention is not disclosed or suggestion by Hung. Lin is applied to teach partially filling the

via with an ARC. Accordingly, Applicant respectfully submits that claim 11 and the claims dependent thereon are patentable over Hung in view of Lin.

The Examiner rejected claim 13 under 35 U.S.C. § 103(a) as being unpatentable over Hung et al. (U.S. 6,380,096) in view of Lin et al. (U.S. 6,042,999) and further in view of Tamaoka et al. (U.S. 6,232,237).

Applicant respectfully submits that claim 13 is patentable over Hung in view of Lin and Tamaoka for the same reasons discussed above relative to claim 11 from which claim 13 depends.

The Examiner rejected claim 15 under 35 U.S.C. § 103(a) as being unpatentable over Hung et al. (U.S. 6,380,096) in view of Lin et al. (U.S. 6,042,999) and further in view of Yamazaki (U.S. 6,350,701).

Applicant respectfully submits that claim 15 is patentable over Hung in view of Lin and Yamazaki for the same reasons discussed above relative to claim 11 from which claim 15 depends.

Applicant respectfully submits that newly added claim 16 is patentable over the reference as there is no disclosure or suggestion in the references of treating a low-k dielectric layer with a $H_2$ plasma to remove a resist pattern and reduce poisoning from a nitrogen source, wherein the treating step occurs in-situ with respect to the etching step, as required by new claim 16. Accordingly, Applicant respectfully submits that claim 16 and the claims dependent thereon are patentable over the references.

In light of the above, Applicant respectfully requests withdrawal of the Examiner's rejections and allowance of claims 1-20. If the Examiner has any questions or other correspondence regarding this application, Applicant requests

that the Examiner contact Applicant's attorney at the below listed telephone number and address.

Respectfully Submitted,

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